



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

E. NORRIS TOLSON
SECRETARY

April 28, 1998

MEMORANDUM TO: Calvin W. Leggett, P. E.
Director of Planning and Programming

THROUGH: Whitmel W. Webb, III, P. E.
Manager Program Development

FROM: David Modlin, P. E.
Feasibility Studies

SUBJECT: Snow Hill Road (SR 1631) and Old Oxford
Road (SR 1004), Durham County

Pursuant to your request for construction cost estimates to improve Snow Hill Road (SR 1631) beginning at US 501 and continuing along Old Oxford Road (SR 1004) to the intersection of Hamlin Road (SR 1634), a distance of approximately 6.3 miles, the following estimates and comments are offered. The two cross sections you specified were an improved two-lane cross section (28 feet) and a four-lane cross section. Because of the significant number of homes (approximately 100) adjacent to the existing roadway, the estimated four-lane section was a divided section with 20-foot raised median with curb and gutter at the outside lanes to minimize right of way requirements. The existing right of way appears to be 60 feet. Most of the homes appear to be on wells and septic systems. Water and sewer improvements are evident and possibly will be extended to this area at a future date.

The estimated construction cost for the two specified alternates are

Two-lane improved to 28 feet of pavement	\$ 7,200,000
Four-lane divided curb and gutter	\$ 16,200,000

By your instructions, right of way estimates were not prepared. There will be some right of way costs associated with either alternate. With the four-lane alternate, the right of way costs are expected to be significant with the potential for a good number of relocatees.



It would appear that the four-lane alternate would duplicate a facility planned by Treyburn between US 501 and SR 2614. The logical improvement would be asymmetrical along the north side of existing Snow Hill Road with a four-lane divided shoulder section tying into the Treyburn facility near Little River Elementary School and Durham Technical Community College. This alternate would be more costly than the curb and gutter alternate and would require approximately 120 feet of right of way. The uneconomical remnants could then pass to Treyburn. The remaining improvements to Snow Hill Road and Old Oxford Road from the Treyburn facility could possibly be limited to two lanes until they merge at the Eno River and then more extensive improvements to Old Oxford Road might be considered south of the Eno River.

Attached is Mr. Tom Newnam's assessment of estimated traffic demand along Snow Hill Road and Old Oxford Road. The expectation is that only a modest amount of traffic might shift to this route from US 501. If however, improvements to Snow Hill Road are anticipated to take the place of the planned Treyburn facilities, then traffic estimates in this area should be reevaluated. I have attached Mr. Newnam's comments and estimate.

Should you have questions, please feel free to call me.

Memo

To: Dave Modlin

From: Tom Newnam

Date: April 16, 1998

Tom

Re: Snow Hill Road Improvements

Based on your request in February, 1998, I have completed my analysis of traffic flows on Snow Hill Road using the existing Durham Urban Area traffic flow model with a 2010 year trip table. My original instructions were to estimate the travel effects on the US 501 corridor and the eastern section of the Eno Drive corridor between US 501 and Old Oxford Road, if the Snow Hill-Old Oxford Roadways were improved. Several newspaper articles since your February request have implied that the Snow Hill-Old Oxford Improvement is to be a replacement for constructing the Eno Drive west of Old Oxford Road.

The existing Durham-Chapel Hill-Carrboro Urban Area Thoroughfare Plan, map dated October 2, 1991, contains a northern freeway loop that starts at US 501 and ends at the Raleigh Outer Loop (I-540). My analysis included analyzing traffic flows in northern Durham with and without this the Northern Freeway Loop being constructed and by analyzing general travel flow paths across northern Durham. The travel path analysis indicated that traffic generated north of the Snow Hill Road area would prefer to use the US 501-Eno Drive corridor over the Snow Hill Road corridor for a trip to eastern Durham.. By removing the Northern Freeway Loop from the plan and analyzing the changes in traffic flows on both the Snow Hill Road and Eno Drive corridors, I was able to determine that Eno Drive provides substantial travel service to the northern Durham area south of the Snow Hill corridor.

While traffic did increase on both the Snow Hill Road and eastern section of Eno Drive without the Northern Freeway, it was not substantial, approximately 4,000 vpd on each corridor using the 2010 trip table. My conclusions are that the Snow Hill-Old Oxford corridor improvements would not be very successful in reducing traffic flow demands on the US 501 corridor, and the corridor could not replace the travel service to Northern Durham that will be provided by the Eno Drive project. A new travel flow model is under development for

the combined Triangle area that should be available for use in early 1999. In my opinion, a better more comprehensive analysis could be done using this new model with a 2025 year land use projections. While the Eno Drive project does facilitate some regional travel service, it also provides very valuable travel service to northern Durham, particularly south of Snow Hill Road, and plans to alter this project would be better served with an analysis using the new model under development.

CC: Ron Poole
Blake Norwood
Debi Hutchings
Bob Martin

